

What is claimed is:

1. A method for adjusting a static torque on a slider in a head-suspension assembly comprising:

measuring a static attitude component of the slider;

determining the attitude component torsional stiffness of the head-suspension assembly;

calculating, from the measured static attitude component and the determined torsional stiffness, the adjustment of the static attitude component required to achieve the desired static torque; and

adjusting the static attitude component.
2. The method of claim 1 wherein determining the attitude component torsional stiffness comprises determining the attitude component effective moment-of-inertia of the slider.
3. The method of claim 2 wherein determining the moment-of-inertia comprises calculating the moment-of-inertia from the known geometry and material composition of the head-suspension assembly.

4. The method of claim 3 wherein determining the moment-of-inertia comprises measuring the attitude component natural frequency of the slider in each of a plurality of samples of head-suspension assemblies, and measuring the attitude component torsional stiffness of each of said samples.

5. The method of claim 1 wherein determining the attitude component torsional stiffness comprises measuring the attitude component natural frequency of the slider.

6. The method of claim 5 wherein measuring the attitude component natural frequency comprises vibrating the slider and measuring the vibration with a laser Doppler vibrometer.

7. The method of claim 6 wherein vibrating the head-suspension assembly comprises directing air flow to the slider.

8. The method of claim 1 wherein adjusting the static attitude component comprises heating the suspension with a laser.

9. The method of claim 8 wherein the suspension includes a load beam and a flexure connecting the slider to the load beam, and wherein heating the suspension with a laser comprises laser-irradiating the flexure.

10. The method of claim 1 wherein adjusting the static attitude component comprises bending the suspension.

11. The method of claim 10 wherein the suspension includes a load beam and a flexure connecting the slider to the load beam, and wherein bending the suspension comprises bending the flexure.

12. The method of claim 1 wherein calculating the static attitude component adjustment includes calculating the static torque and comparing said calculated static torque to the desired static torque.

13. The method of claim 1 wherein the attitude component is the slider pitch attitude.

14. The method of claim 1 wherein the attitude component is the slider roll attitude.

15. A method for adjusting the pitch static torque on a slider in a head-suspension assembly that includes a load beam, an air-bearing slider supporting a read/write head, and a flexure connecting the slider to the load beam and permitting the slider to pitch about a pitch axis and roll about a roll axis, the method comprising:

measuring the pitch static attitude of the slider;

determining the pitch torsional stiffness of the head-suspension assembly by

determining the effective moment-of-inertia of the slider about the pitch axis and measuring the pitch natural frequency of the slider;

calculating, from the measured pitch static attitude and the determined pitch torsional stiffness, the adjustment of the pitch static attitude required to achieve the desired pitch static torque; and

adjusting the pitch static attitude.

16. The method of claim 15 wherein determining the pitch moment-of-inertia comprises calculating the pitch moment-of-inertia from the known geometry and material composition of the head-suspension assembly.

17. The method of claim 15 wherein determining the pitch moment-of-inertia comprises measuring the pitch natural frequency of the slider in each of a plurality of samples of head-suspension assemblies, and measuring the pitch torsional stiffness of the slider in each of said samples.

18. The method of claim 15 wherein measuring the pitch natural frequency comprises vibrating the slider and measuring the vibration with a laser Doppler vibrometer.

19. The method of claim 18 wherein vibrating the slider comprises directing air flow to the slider.

20. The method of claim 15 wherein adjusting the pitch static attitude comprises heating the flexure with a laser.

21. The method of claim 15 wherein adjusting the pitch static attitude comprises bending the flexure.

22. The method of claim 15 wherein calculating the pitch static attitude adjustment comprises dividing the desired pitch static torque by the determined pitch torsional stiffness and comparing said result to the measured pitch static attitude.

23. A method for adjusting the roll static torque on a slider in a head-suspension assembly that includes a load beam, an air-bearing slider supporting a read/write head, and a flexure connecting the slider to the load beam and permitting the slider to pitch about a pitch axis and roll about a roll axis, the method comprising:

measuring the roll static attitude of the slider;

determining the roll torsional stiffness of the head-suspension assembly by

determining the effective moment-of-inertia of the slider about the roll axis and measuring the roll natural frequency of the slider;

calculating, from the measured roll static attitude and the determined roll torsional stiffness, the adjustment of the roll static attitude required to achieve the desired roll static torque; and

adjusting the roll static attitude.

24. The method of claim 23 wherein determining the roll moment-of-inertia comprises calculating the roll moment-of-inertia from the known geometry and material composition of the head-suspension assembly.

25. The method of claim 23 wherein determining the roll moment-of-inertia comprises measuring the roll natural frequency of the slider in each of a plurality of samples of head-suspension assemblies, and measuring the roll torsional stiffness of the slider in each of said samples.

26. The method of claim 23 wherein measuring the roll natural frequency comprises vibrating the slider and measuring the vibration with a laser Doppler vibrometer.

27. The method of claim 18 wherein vibrating the slider comprises directing air flow to the slider.

28. The method of claim 23 wherein adjusting the roll static attitude comprises heating the flexure with a laser.

29. The method of claim 23 wherein adjusting the roll static attitude comprises bending the flexure.

30. The method of claim 23 wherein calculating the roll static attitude adjustment comprises dividing the desired roll static torque by the determined roll torsional stiffness and comparing said result to the measured roll static attitude.